

CLAIMS

1. A method for making a ceramic product from fiber glass waste, comprising:
reducing the fiber glass waste into a glass powder;
mixing the glass powder with additives into a glass-additives mixture;
granulating the glass-additives mixture into granulated particles;
forming the granulated particles into a green ceramic article; and
heating the green ceramic article into the ceramic product.
2. The method according to claim 1, wherein the fiber glass waste is heated, prior to the reducing of the fiber glass waste into the glass powder.
3. The method according to claim 1, wherein the fiber glass waste is heated to remove water, burn out organic matter, and/or increase the friability of the fiber glass waste, prior to the reducing of the fiber glass waste into the glass powder.
4. The method according to claim 1, wherein the reducing of the fiber glass waste into the glass powder comprises reducing the fiber glass waste to pieces with fiber lengths less than about 0.6 mm.
5. The method according to claim 1, wherein the reducing of the fiber glass waste into the glass powder comprises reducing the fiber glass waste with a liquid added.
6. The method according to claim 1, wherein the reducing of the fiber glass waste into the glass powder comprises reducing the fiber glass waste with water added.
7. The method according to claim 1, wherein the reducing of the fiber glass waste into the glass powder comprises reducing the fiber glass waste without a liquid added.
8. The method according to claim 1, wherein 70-100 weight percent of the glass-additives mixture is comprised of the waste glass, 0-20 weight percent of the glass-additives mixture is comprised of fillers, and 0-10 weight percent of the glass-additives mixture is comprised of organic binders.

9. The method according to claim 1, wherein the additives are comprised of fillers, consisting of silica, alumina, zirconia, clay, feldspar, and/or any other ceramic raw material.
10. The method according to claim 1, wherein the additives are comprised of fillers, consisting of clay, sodium silicate, and/or any other inorganic binder.
11. The method according to claim 1, wherein the additives are comprised of fillers, consisting of inorganic colorants.
12. The method according to claim 1, wherein the additives are comprised of fillers, consisting of coarse-sized particles added to roughen a surface texture of the ceramic product.
13. The method according to claim 1, wherein the additives are comprised of fillers added to improve a property of the ceramic product, including but not limited to mechanical, chemical durability, and thermal properties.
14. The method according to claim 1, wherein the additives are comprised of aqueous organic binders.
15. The method according to claim 1, wherein the additives are comprised of nonaqueous organic binders.
16. The method according to claim 1, wherein the mixing of the glass powder with additives into a glass-additives mixture is comprised of mixing of the glass powder with additives in a liquid.
17. The method according to claim 1, wherein the mixing of the glass powder with additives into a glass-additives mixture is comprised of mixing of the glass powder with additives in water.
18. The method according to claim 1, wherein the mixing of the glass powder with additives into a glass-additives mixture is comprised of mixing of the glass powder with additives without a liquid added.

19. The method according to claim 1, wherein the granulating of the glass-additives mixture into granulated particles is comprised of drying the glass-additives mixture in a drier, including but not limited to a spray drier or fluid-bed drier.
20. The method according to claim 1, wherein the forming of the granulated particles into a green ceramic article is comprised of pressing or extrusion.
21. The method according to claim 1, wherein the heating of the green ceramic article into the ceramic product comprises firing the green ceramic article to a maximum temperature of about 700°C to about 1000°C.
22. The method according to claim 1, wherein the heating of the green ceramic article into the ceramic product comprises drying the green ceramic article to remove liquid, followed by firing to a maximum temperature of about 700°C to about 1000°C.
23. The method according to claim 1, wherein the heating of the green ceramic article into the ceramic product causes partial crystallization of the ceramic product.
24. The method according to claim 1, wherein the ceramic product comprises tile or brick.
25. The method according to claim 1, wherein the ceramic product has a smooth glossy surface.
26. The method according to claim 1, wherein the ceramic product is further processed by applying a glaze thereon.